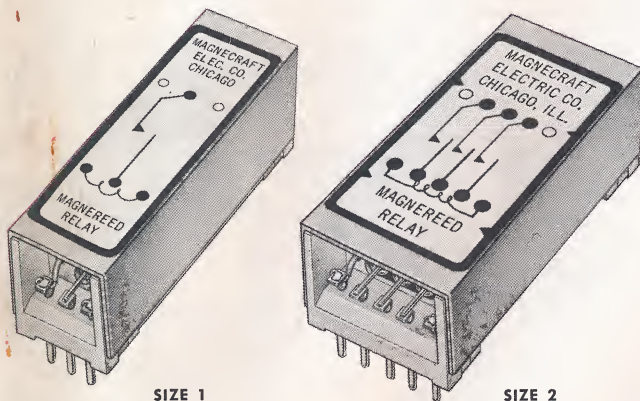


Product Data Bulletin, Number 662

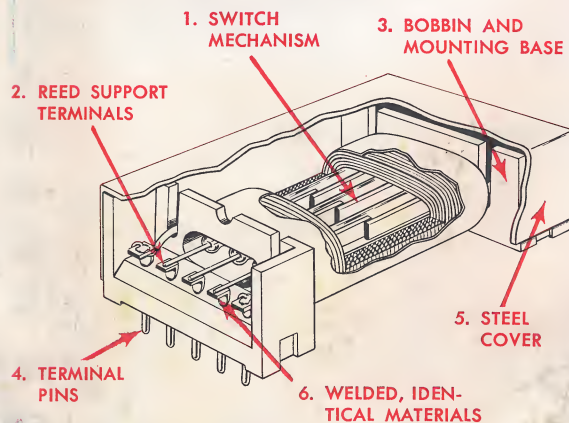
MINIATURE MPC REED RELAYS NOW AVAILABLE

Compact Mercury-Wetted and Dry Reed Units for Printed Circuit Applications



Miniature MPC Reed Relays have lower profiles for even greater compactness in design of printed circuits.

Engineered for Maximum Reliability!



1. SWITCH MECHANISM. Hermetically sealed within a glass capsule filled with an inert gas, contacts and reeds are completely protected from contamination and tampering.

2. REED SUPPORT TERMINALS. Rigidly anchored to the molded bobbin and welded stress-free to the switch leads. External stresses cannot be transmitted to the switch mechanism.

3. BOBBIN AND MOUNTING BASE. The integral Nylon molding provides maximum electrical insulation and mechanical protection to the relay's components.

4. TERMINAL PINS. Spaced for 0.1 inch grid centers for easy, rapid assembly to printed circuit boards.

5. STEEL COVER. Provides full mechanical protection and magnetic shielding to the relay.

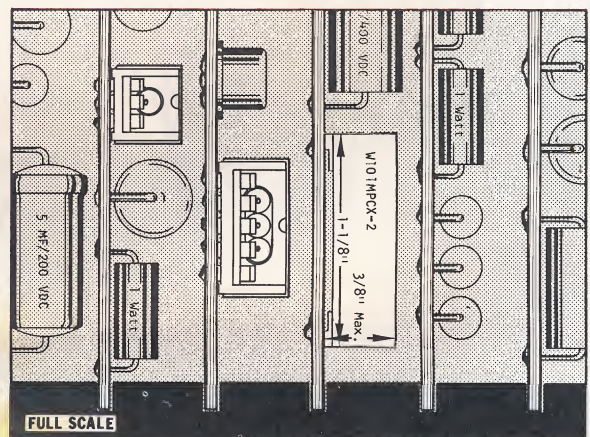
6. WELDED IDENTICAL MATERIALS. Welding provides highest connection strength with lowest electrical resistance; identical materials cause lowest noise.

The Magnecraft family of MPC Modular Printed Circuit Reed Relays provides the design engineer with an extremely versatile reed relay concept... single or multiple, Form A or Form C, mercury-wetted or dry reeds actuated by a common coil and housed in a common enclosure. This versatility is now even greater with the development of miniaturized mercury-wetted and dry MPC Reed Relays!

Miniature MPC Reed Relay switch capsules are available in 1 Form A (SPST) and 1 Form C (SPDT) dry reed units and 1 Form A (SPST) mercury-wetted contact units. Two enclosure packages have been designed to provide a wide variety of possible contact combinations... up to 3 Form A (3PST) or 2 Form C (DPDT) in dry reed relays and up to 2 Form A (DPST) in mercury-wetted contact relays.

Miniature MPC Reed Relays offer more than versatility alone... they're fast and reliable! Form A dry reed MPC Relays provide operating times of one millisecond average and life expectancies of 5 million cycles at *rated loads*! Contact ratings and mechanical construction is fully consistent with circuit requirements. Miniaturized MPC Reed Relays are the ideal units for compact printed circuit design!

Low Profile, Compact Design Saves Space



HEIGHT makes waste... in printed circuit designs! Conventional relays and reed units with high profiles severely curtail the number of printed circuit boards that can be positioned in a bin. No space sacrifice is necessary with Magnecraft Miniature MPC Reed Relays; they're no higher than commonly used capacitors and resistors... only $\frac{3}{8}$ inch high! When low profile, compact components are needed, specify Magnecraft *Miniature MPC Reed Relays*!

16 Different Miniature Dry Reed Relays . . .

IN STOCK for Immediate, Off The Shelf Delivery!

The primary function of Magnecraft Electric Company is designing and building precision, high reliability relays tailored to meet specific application requirements. Since the introduction of the MPC family of mercury-wetted contact and dry reed relays, literally hundreds of variations in contact configurations and coil characteristics have been built to individual specifications.

Many of these custom built reed relays have found wide applications in the electrical and electronic fields. In order to provide faster delivery of the most popular Miniature MPC Reed Relays, 16 dry reed units, indicated in the tables below, are maintained as stock items for "off the shelf" delivery and may be ordered from your local franchised Magnecraft Distributor . . . at factory prices.

SPECIFICATIONS

CLASS 101MPC DRY REED RELAY, SIZE 1

Contacts: SPST-NO (Form A)
 DC Power Required: 500 Milliwatts
 Operate Time: 1 Millisecond, average
 Release Time: 0.5 Millisecond, average
 Contact Bounce: 0.5 Millisecond, average
 Contact Load Rating: 10 Volt-Amperes maximum at 250 Milliamperes maximum or 100 Volts maximum, non-inductive
 Contact Resistance: 150 Milliohms, average
 Capacitance Across Contacts: 0.8 Picofarad, average
 Life Expectancy, Rated Load: 5 million cycles
 Insulation to Ground: 500 Volts AC, RMS
 Operating Position: Any
 Ambient Temperature Range: -50°F. to +185°F.

CLASS 101MPC DRY REED RELAY, SIZE 2

Same as Size 1, above, except for:

Contacts: 3PST-NO (3 Form A)

DC Power Required: 700 Milliwatts

CLASS 104MPC DRY REED RELAY, SIZE 1

Contacts: SPDT (Form C) Single Side Stable*

DC Power Required: 500 Milliwatts

Operate Time: 1 Millisecond, average
 Release Time: 1 Millisecond, Average
 Contact Bounce: *Normally Open*—0.5 Millisecond, average;
Normally Closed—2 Milliseconds, average
 Contact Load Rating: 3 Volt-Amperes maximum at 250 Milliamperes maximum or 28 Volts maximum, non-inductive
 Contact Resistance: 150 Milliohms, average
 Capacitance Across Contacts: 1.5 Picofarads, average
 Life Expectancy, Rated Load: 10 million cycles
 Insulation to Ground: 500 Volts AC, RMS
 Operating Position: Any
 Ambient Temperature Range: -50°F. to +185°F.
CLASS 104MPC DRY REED RELAY, SIZE 2
 Same as Size 1, above, except for:
 Contacts: DPDT (2 Form C) Single Side Stable*
 DC Power Required: 700 Milliwatts

AVAILABLE FOR IMMEDIATE DELIVERY

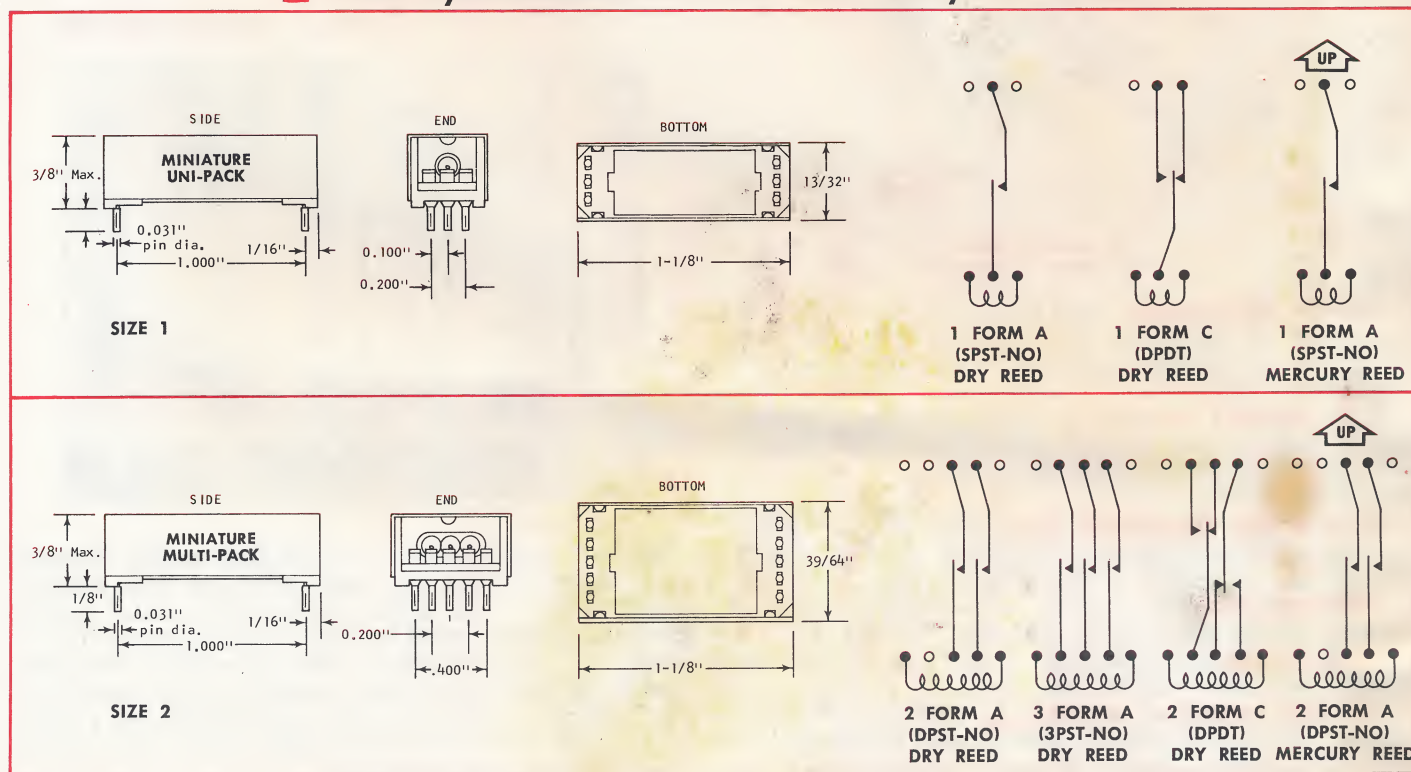
CATALOG NUMBER	CONTACTS	SIZE	COIL DATA		NET EA. @ 1 to 24
			VDC†	OHMS	
W101MPCX-1	SPST-NO	1	6	70	3.60
W101MPCX-2	SPST-NO	1	12	300	3.60
W101MPCX-3	SPST-NO	1	24	1100	3.63
W101MPCX-4	SPST-NO	1	48	4300	3.77
W101MPCX-5	3PST-NO	2	6	50	6.75
W101MPCX-6	3PST-NO	2	12	220	6.75
W101MPCX-7	3PST-NO	2	24	850	6.77
W101MPCX-8	3PST-NO	2	48	3300	6.85
W104MPCX-1	SPDT	1	6	70	6.82
W104MPCX-2	SPDT	1	12	300	6.83
W104MPCX-3	SPDT	1	24	1100	6.85
W104MPCX-4	SPDT	1	48	4300	6.98
W104MPCX-5	DPDT	2	6	50	11.62
W104MPCX-6	DPDT	2	12	220	11.63
W104MPCX-7	DPDT	2	24	850	11.65
W104MPCX-8	DPDT	2	48	3300	11.73

†Voltage operated relays pull in at 85% of nominal voltage at 25°C.

*Single Side Stable — Armature contact releases from the operated position when coil current falls below the dropout value.

@Quantity discounts available on request.

2 Case Styles—Dimensions and Stock Relay Schematics



Or, Write Your Own Specifications on Mercury-Wetted and Other Dry Reed Units Available on Special Order!

Hundreds of variations of stock Miniature MPC Reed Relays are available on special order to meet specific application requirements. Mercury-wetted contact units, listed below, are also available on special order. Special orders can be placed with Magnecraft representatives or with the factory. You may order mercury-wetted or dry reed variations by specifying the catalog number of the listed unit that most closely matches the desired characteristics, and by specifying the required variation.

Reed relay design is one of the most rapidly developing areas in the electrical and electronic fields; new answers are being found daily. Therefore, if you don't see the relay you need, call on us. A detailed description of your requirements will have prompt attention from Magnecraft's engineering staff to provide you with comprehensive recommendations.

SPECIFICATIONS

CLASS 131MPC MERCURY-WETTED RELAY, SIZE 1

Contacts: SPST-NO (Form A)
 DC Power Required: 500 Milliwatts
 Operate Time: 1 Millisecond, average
 Release Time: 1 Millisecond, average
 Contact Bounce: None
 Contact Load Rating: 28 Volt-Amperes maximum at 1 Ampere maximum or 100 Volts maximum, non-inductive
 Contact Resistance: 50 Milliohms, average
 Capacitance Across Contacts: 1.2 Picofarads, average
 Life Expectancy, Rated Load: 100 million cycles
 Insulation to Ground: 500 Volts AC, RMS
 Operating Position: Upright, no more than 30° from vertical
 Ambient Temperature Range: -37°F. to +185°F.

CLASS 131MPC MERCURY-WETTED RELAY, SIZE 2

Same as Size 1, above, except for:
 Contacts: DPST-NO (2 Form A)
 DC Power Required: 700 Milliwatts

MERCURY-WETTED REED RELAYS SPECIAL ORDER DATA

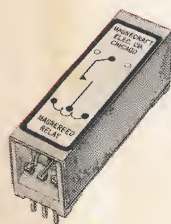
CATALOG NUMBER	CONTACTS	SIZE	COIL DATA	
			VDC†	OHMS
131MPCX-2	SPST-NO	1	6	70
131MPCX-3	SPST-NO	1	12	300
131MPCX-4	SPST-NO	1	24	1100
131MPCX-5	SPST-NO	1	48	4300
131MPCX-6	DPST-NO	2	6	50
131MPCX-7	DPST-NO	2	12	220
131MPCX-8	DPST-NO	2	24	850
131MPCX-9	DPST-NO	2	48	3300

STANDARD COIL DATA

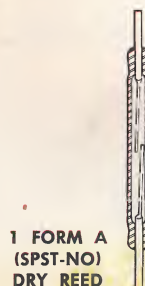
AWG WIRE SIZE	SIZE 1		SIZE 2	
	SPST-NO & SPDT		to 3PST-NO or DPDT	
	OHMS	TURNS	OHMS	TURNS
27	.7	200	1.5	200
28	1.0	250	2.0	250
29	2.0	320	3.0	300
30	3.0	400	4.0	380
31	4.5	490	5.5	400
32	6.5	600	10	600
33	10	700	15	750
34	20	1000	25	900
35	30	1270	40	1250
36	45	1500	50	1200
37	70	2000	90	1850
38	100	2400	150	2300
39	200	3200	220	2600
40	300	4150	450	4100
41	450	5000	650	4800
42	700	6200	850	5200
43	1100	7500	1600	7500
44	1750	10000	2400	10000
45	2100	13000	3300	10500
46	4300	15500	—	—

Resistance values $\pm 10\%$, measured at 25°C.

Miniature Reed Relays Provide Dozens of Contact Arrangements



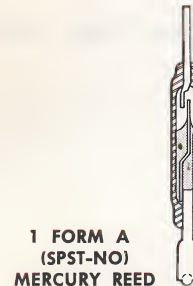
SIZE 1



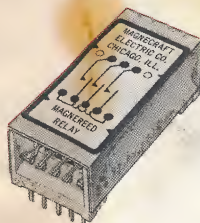
1 FORM A
(SPST-NO)
DRY REED



1 FORM C
(SPDT)
DRY REED



1 FORM A
(SPST-NO)
MERCURY REED



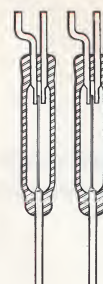
SIZE 2



2 FORM A
(DPST-NO)
DRY REED



3 FORM A
(3PST-NO)
DRY REED



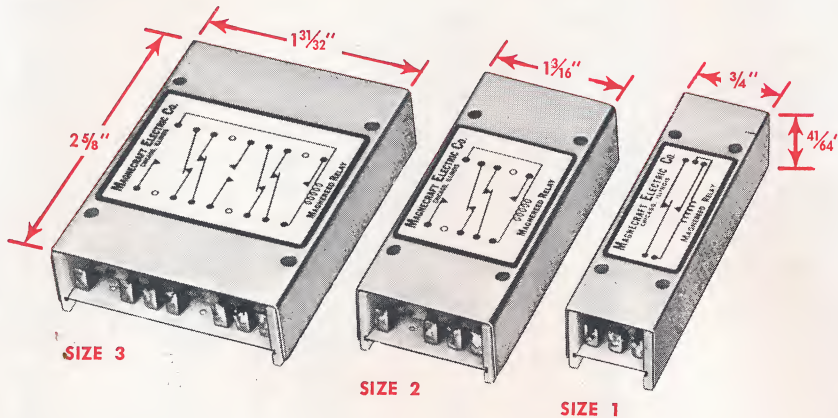
2 FORM C
(DPDT)
DRY REED



2 FORM A
(DPST-NO)
MERCURY REED

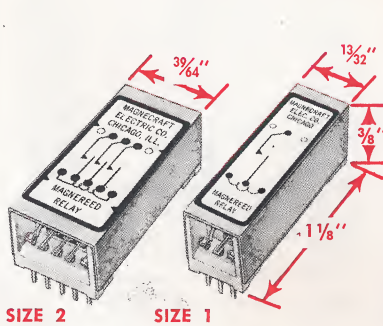
MPC Reed Relays . . . A Design Concept That Answers Virtually Any Printed Circuit Switching Problem!

STANDARD MPC REED RELAYS



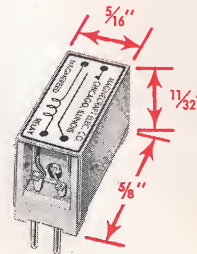
Three case sizes with contact configurations from SPST-NO to 7PST-NO or from SPDT to 4PDT. SPST and SPDT switch capsules can be combined to form dozens of other variations. Standard size MPC Reed Relays are available in mercury-wetted units with contact ratings of 50 VA at 1 Amp or 250VAC or dry reeds with 15 VA rating. Also available are Magnetic Latching Reed Relays and 3 Amp Power Reed Relays. 54 different Standard MPC Reed Relays can be shipped immediately from stock . . . hundreds of other variations on special order. Write for Bulletin PDB661.

MINIATURE MPC REED RELAYS



Fully described in this Bulletin, Miniature MPC Reed Relays are low profile, space-saving units available in both mercury-wetted and dry reeds. Two case sizes and three capsule sizes can be interchanged to meet literally dozens of compact printed circuit requirements.

MICRO-MINIATURE MPC REED RELAYS



The third and smallest member of the versatile MPC Reed Relay family, these Micro-Miniature Dry Reed Relays are the ultimate in compactness for miniaturized printed circuit designs. Full details are included in Bulletin PDB663 . . . yours for the asking! Also described in this Bulletin are the new Class 105EP Micro-Miniature Encapsulated Dry Reed Relays, electrically similar but with axial leads.

See Your Local **MAGNECRAFT MPC** Reed Relay Distributor . . .

Or, write for more data and your free, reserved copy
of our complete 50-page catalog.

MAGNECRAFT ELECTRIC COMPANY

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